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October 18, 1881. During this time it described a heliocentric arc of 167°, namely, 77° before and 90° after perihelion passage. The length of this arc is sufficient to afford a very accurate determination of the orbit, and to give us confidence in the results obtained by Dr. STECHERT. The most probable elements which he obtained were hyberbolic, differing so little, however, from the parabolic ones given above, that he finally selected the latter as the definitive elements. In his attempts to vary the eccentricity, he found that the observations could be represented fairly well by all orbits from an ellipse corresponding to a periodic time of 100,000 years to an hyperbola having an eccentricity equal to 1.0003. If the orbit is included within these limits, as seems reasonably certain, the Comet 1881 IV is not one of short period, and cannot have returned by this time. Moreover, Comet BROOKS has been following closely the ephemeris computed from my elements, and has not given any indication of departure from parabolic motion. These circumstances preclude the possibility of these comets being identical. They may certainly, however, be said to belong to the same family.

W. J. HUSSEY.

LICK OBSERVATORY, November 15, 1898.

THE SMALL BRIGHT NEBULA NEAR *MEROPE*.

In No. 3018 of *Astronomische Nachrichten*, Professor BARNARD called attention to a small nebula near the star *Merope*, which he had discovered by visual observation with the 12-inch telescope of the Lick Observatory. He describes the nebula as round, bright — though not easily visible on account of its proximity to the star, — and apparently not connected with the nebulous system of the *Pleiades*. It turned out that the nebula had previously been photographed; but its character is sufficiently different from other nebulosities in the same region to justify its treatment by BARNARD as an individual nebula.

This nebula is well shown on some photographs which I have recently obtained with the 3-foot reflector presented to the Lick Observatory by Mr. CROSSLEY. My attention was, in fact, attracted by it before I recalled the note by Professor BARNARD, mentioned above. Though small, it is by far the brightest nebula in the *Pleiades*. Of the plates which I have obtained, the one which shows it best received the shortest exposure (fifteen minutes). I have no doubt that it can be photographed with the CROSSLEY reflector in five minutes, or even in less time than this.

The nebula, as shown on the photographs, is roughly pentagonal in shape, the most salient angle pointing directly to *Merope*. From opposite sides, symmetrically placed with respect to the line joining the nebula and the star, two wisps of nebulosity stream away, and join the other nebulous wisps which are characteristic of the region. It is possible that this appearance may be illusory, as the wisps of nebulosity may be continued on the other side of the nebula, instead of proceeding from it; there is not a sufficient interval on the plate between the nebula and the star to allow this supposition to be tested. The angular form of the nebula, however, seems to show that it is not a cometary or planetary nebula fortuitously placed in line with a nebulous cluster, and it is altogether probable that it is a part of the general nebulous system of the *Pleiades*.

The photographs are on a large scale ($1^{mm} = 38''.7$), and are of excellent definition. Stars are shown double which are single on the Paris map. The plates were coated on the back to prevent "halation." JAMES E. KEELER.

THE MOTION OF THE POLE.

In connection with an investigation of the revised elements of the motion of the Earth's pole, based on modern observations, Dr. S. C. CHANDLER gives in *Astronomical Journal*, 446, diagrams for comparison of its observed course between 1890 and 1897.5, with that predicted by the geometrical theory deduced some years ago from observations from 1825 to 1893. We have reproduced these diagrams here, as they are of very great interest, inasmuch as they afford a graphic proof of the truth of the theory that is most convincing. A careful comparison will show that, as Dr. CHANDLER says, "what differences exist are of a subordinate nature; that is, they manifestly relate to the need of slight emendation of the numerical constants used, and not to the correctness of the geometrical theory." We may, therefore, take it as demonstrated "that the Earth's axis is subject to a composite motion arising from a uniform circular revolution in 428 days, and a very eccentric central elliptic motion obeying the law of proportionality of times to areas about a mean position on the Earth's surface." Subsequent observations will perfect the details of the theory, but are not likely to affect the main conclusions. R. G. AITKEN.